

WATER

HYDROLOGICAL DATA

GROUND WATER RECONNAISSANCE AND

DRILLED WELLS STUDIES

IN THE GASTINEAU CHANNEL AREA

ALASKA DEPT. OF HEALTH
SECTION OF SANITATION & ENGINEERING
JUNEAU - ALASKA

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SECTION OF SANITATION AND ENGINEERING
ALASKA DEPARTMENT OF HEALTH
Juneau, Alaska

DRILLED WELLS
Juneau Area

Practical data on ground water sources in the Juneau area have been compiled from reports and logs of well drilling operations of the Alaska Drilling Corporation.

At Point Lena, drilling was done in volcanic rocks which include lavas, flow breccias, tuffs, and conglomerates. These rocks are among the hardest and firmest of the area. Clay slates are interstratified with the tuffaceous beds in some places. One well (Number 7) out of the seven wells studied in this area yielded water in slate. The others yielded water in volcanic material. The volcanic rock water producers, which include six wells in this area, yielded water at depths of 44 to 85 feet. The average yield from these six wells was approximately 120 g.p.h. The slate producer yielded only 12 g.p.h. at 195 feet. Well Number 43, at 85 feet produced the greatest yield (480 g.p.h.) from volcanic rock.

In the Auke Bay Area, Quaternary sand, gravel, and silt deposits are thicker and overlie, generally, fissile black clay slates. Fourteen producing wells in this area range in depths from 71 to 145 feet in this formation. The yield varies from 20 to 1200 g.p.h. depending upon the degree of fractured rock encountered. The well drilled at the Chapel by the Lake produces 1200 g.p.h. from fractured slate resulting from stresses developed during faulting. The depth of this well is 120 feet. The average depth of drilling in this area for the better producers, averaging approximately 230 g.p.h., apparently occurs at about 85 feet.

The next area to be considered is that along Fritz Cove Road where four wells were drilled in black slate with water yields of 96 - 300 g.p.h. The best producer was one drilled 70 feet and yielded 300 g.p.h. However, the average depth of drilling was about 72 feet and the average yield from these wells, 170 g.p.h. It appears, therefore, that the rock in this area is less fractured than similar slate strata in the Auke Bay area.

One drilled well, located on the East margin of the outwash plain at Lemon Creek, is producing water at the rate of 37 g.p.h. from a depth of 165 feet in shale. Further west in this outwash plain proper, the water supply from shallower wells should be much better as glacial and stream deposits of silts, sands and gravels are quite thick.

Nearer Juneau and at Mile 1 to 2, drilled wells in Quaternary deposits of sand and gravel obtained water at 23 to 67 feet. The best yield was at 39 feet at a rate of 700 g.p.h. The poorest yield was obtained at 67 feet, at a rate of 60 g.p.h.

Along North Douglas Road, drilling into slate at depths of 75 to 230 feet yielded some water depending, of course, on the degree of fractured rock encountered. One well drilled into black slate to a depth of 230 feet

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yielded no water. Another well produced water at the rate of 37 g.p.h. at a depth of 118 to 131 feet in slate. The best yield so far in slate has occurred at 75 feet. This well (Number 21) produces about 90 g.p.h. Where volcanic rock was encountered (wells 14 & 15) at depths of 40 to 47 feet, better yields of water were obtained at rates of 180 to 240 g.p.h.

In most areas, therefore, it seems probable that enough water for individual home supplies can be obtained from hard rock formations. The yield will depend upon the porosity which is dependent on the degree of fractured rock encountered. The highest yield from rock formation has occurred from the Chapel by the Lake well and, in this case, a high degree of fracturing due to faulting was encountered at 120 feet. This is, of course, an exception and unless such fractured zones are present, the yield will be low.

The best areas for producing larger supplies of water appear to be the outwash plains of the major streams along Glacier Highway. The unconsolidated material in these areas, consisting of silt, sand, and gravel, should allow effective percolation of precipitation and stream flow into porous deposits.

Samples of water tested for chemical analysis so far indicate the ground water in the Juneau area is of good character. The only objectionable feature noted is the somewhat high sodium content. The chloride content is very low considering the proximity to the ocean. Hardness runs about 80-120 ppm and the water, therefore, is classified moderately hard.

The attached map shows locations of wells which have been reported. A log of these wells is also attached indicating location, depth, water level, g.p.h. and depth cased. The attached report by Mr. Roger M. Waller of the Geological Survey describes his ground water reconnaissance studies in the Juneau Area.

Frank O. Booth
Environmental Sanitation Advisor

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JUNEAU AREA
DRILLED WELLS

	Name	Location	Depth Feet	Water Level Feet	G.P.H.	Depth Cased Feet
1.	Juneau Childrens' Home	Glacier Highway	---	---	---	---
2.	Donald Vertin	Auke Bay	90	12	240	14
3.	Perry Hobbs	Point Lena	44	F	25	9
4.	Robert Druxman	Auke Bay	83	13	20	29
5.	Spencer Israelson	N. Douglas Rd.	32	---	---	---
6.	Ken Buzzell	Stevens Point	75	26	30	13
7.	Minfield Home	Point Lena	195	19	12	25
8.	Jim DeHart	Auke Bay	90	F	360	51
9.	Jack Thompson	Auke Bay	71	F	60	31
10.	Ralph Smith	Fritz Cove Rd.	53	F	110	36
11.	Axel Neilson	Auke Bay	130	50	150	41
12.	Jack Donohue	Tee Harbor	190	---	---	---
13.	Ben Nowacki	Auke Bay	80	F	30	63
14.	Bill Ahrenfeld	N. Douglas Rd.	40	1	240	20
15.	Ernest Kolhase	N. Douglas Rd.	47	F	180	24
16.	Stanley Jekill	Auke Bay	85	19	300	34
17.	W. Deboff	Pt. Stevens Rd.	78	8	27	21
18.	Marvin Petit	Auke Bay	90	23	100	30
19.	Floyd Ogden	Auke Bay	80	21	60	33
20.	Robert Parker	Fritz Cove Rd.	80	4	96	30
21.	Spencer Israelson #2	N. Douglas Rd.	75	F	90	28
22.	Leo Thompson	Glacier Highway	165	F	37	76
23.	George Danner	Glacier Highway	23	6	600	22
24.	Lee Coon	Fritz Cove Rd.	78	10	135	14

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Name	Location	Depth Feet	Water Level Feet	G.P.H.	Depth Cased Feet
25. Chapel by the Lake	Auke Lake	120	42	1200	---
26. R. Reischal	Fritz Cove Rd.	90	51	180	24
27. Phil Dawes	Fritz Cove Rd.	145	30	480	15
28. Joe Kendler	Glacier Highway	25	---	420	22
29. Jack Darnell	Old Glacier Hwy.	83	20	12	11
30. John Hagmeier	Auke Bay	85	10	100	13
31. Juneau Childrens' Home #2	Glacier Highway	225	---	---	13 ⁴
32. C. L. Roundtree	Norway Point	39	12	700 ^f	38
33. William F. Brown	Norway Point	67	8	60 ^f	40
34. Elwood Reddekopp	Loop Road	88	37	1200	35
35. Glenn Mielke	Fritz Cove Rd.	70	F	300	31
36. Frank Meir	---	---	---	---	---
*37. (1) Pt. Lena A.C.S. Station		63	12.2	45	63
38. (5) Pt. Lena A.C.S. Station		40	31.5	---	17
39. (6) Pt. Lena A.C.S. Station		30	---	---	7
40. (2) Pt. Lena A.C.S. Station		78	13.0	90	76
41. (4) Pt. Lena A.C.S. Station		52	---	---	32
42. (3) Pt. Lena A.C.S. Station		57	5.0	90	33
43. (7) Pt. Lena A.C.S. Station		85	8.8	480	85

(*) Casings to be pulled on all wells except Numbers 1, 2, and 7

(F) Flowing

(---) No Record

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